

SEQUENCE LISTING

<110> Merck & Co., Inc.

<120> ORTHOGONAL GENE SWITCHES

<130> ITR0041-PCT

<150> 60/514,362

<151> 2003-10-24

<160> 62

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 314

<212> PRT

<213> human

<400> 1

Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Leu Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Met Val Glu Ile Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255

Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
 260 265 270
 Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
 275 280 285
 Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
 290 295 300
 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
 305 310

<210> 2
 <211> 314
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> human sequence with a point mutation

<400> 2

Ser	Ala	Gly	Asp	Met	Arg	Ala	Ala	Asn	Leu	Trp	Pro	Ser	Pro	Leu	Met
1				5				10				15			
Ile	Lys	Arg	Ser	Lys	Lys	Asn	Ser	Leu	Ala	Leu	Ser	Leu	Thr	Ala	Asp
	20					25						30			
Gln	Met	Val	Ser	Ala	Leu	Leu	Asp	Ala	Glu	Pro	Pro	Ile	Leu	Tyr	Ser
	35					40					45				
Glu	Tyr	Asp	Pro	Thr	Arg	Pro	Phe	Ser	Glu	Ala	Ser	Met	Met	Gly	Leu
	50					55					60				
Leu	Thr	Asn	Leu	Ala	Asp	Arg	Glu	Leu	Val	His	Met	Ile	Asn	Trp	Ala
	65					70				75		80			
Lys	Arg	Val	Pro	Gly	Phe	Val	Asp	Leu	Thr	Leu	His	Asp	Gln	Val	His
		85				90					95				
Leu	Leu	Glu	Cys	Ala	Trp	Met	Glu	Ile	Leu	Met	Ile	Gly	Leu	Val	Trp
		100				105					110				
Arg	Ser	Met	Glu	His	Pro	Gly	Lys	Leu	Leu	Phe	Ala	Pro	Asn	Leu	Leu
		115				120					125				
Leu	Asp	Arg	Asn	Gln	Gly	Lys	Cys	Val	Glu	Gly	Met	Val	Glu	Ile	Phe
	130					135					140				
Asp	Met	Leu	Leu	Ala	Thr	Ser	Ser	Arg	Phe	Arg	Met	Met	Asn	Leu	Gln
	145					150				155		160			
Gly	Glu	Glu	Phe	Val	Cys	Leu	Lys	Ser	Ile	Ile	Leu	Leu	Asn	Ser	Gly
		165				170					175				
Val	Tyr	Thr	Phe	Leu	Ser	Ser	Thr	Leu	Lys	Ser	Leu	Glu	Lys	Asp	
		180				185					190				
His	Ile	His	Arg	Val	Leu	Asp	Lys	Ile	Thr	Asp	Thr	Leu	Ile	His	Leu
		195				200					205				
Met	Ala	Lys	Ala	Gly	Leu	Thr	Leu	Gln	Gln	His	Gln	Arg	Leu	Ala	
	210					215					220				
Gln	Leu	Leu	Leu	Ile	Leu	Ser	His	Ile	Arg	His	Met	Ser	Asn	Lys	Gly
	225					230				235		240			
Met	Glu	His	Leu	Tyr	Ser	Met	Lys	Cys	Lys	Asn	Val	Val	Pro	Leu	Tyr
		245							250				255		
Asp	Leu	Leu	Leu	Glu	Met	Leu	Asp	Ala	His	Arg	Leu	His	Ala	Pro	Thr
		260				265					270				
Ser	Arg	Gly	Gly	Ala	Ser	Val	Glu	Glu	Thr	Asp	Gln	Ser	His	Leu	Ala
	275					280					285				

Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
 290 295 300
 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
 305 310

<210> 3
 <211> 314
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> human sequence with point mutations

<400> 3

Ser	Ala	Gly	Asp	Met	Arg	Ala	Ala	Asn	Leu	Trp	Pro	Ser	Pro	Leu	Met
1				5				10						15	
Ile	Lys	Arg	Ser	Lys	Lys	Asn	Ser	Leu	Ala	Leu	Ser	Leu	Thr	Ala	Asp
	20					25							30		
Gln	Met	Val	Ser	Ala	Leu	Leu	Asp	Ala	Glu	Pro	Pro	Ile	Leu	Tyr	Ser
	35					40						45			
Glu	Tyr	Asp	Pro	Thr	Arg	Pro	Phe	Ser	Glu	Ala	Ser	Met	Met	Gly	Leu
	50					55					60				
Leu	Thr	Asn	Leu	Ala	Asp	Arg	Glu	Leu	Val	His	Met	Ile	Asn	Trp	Ala
	65					70			75			80			
Lys	Arg	Val	Pro	Gly	Phe	Val	Asp	Leu	Thr	Leu	His	Asp	Gln	Val	His
						85			90			95			
Leu	Leu	Glu	Cys	Ala	Trp	Met	Glu	Ile	Leu	Met	Ile	Gly	Leu	Val	Trp
						100			105			110			
Arg	Ser	Met	Glu	His	Pro	Gly	Lys	Leu	Leu	Phe	Ala	Pro	Asn	Leu	Leu
						115			120			125			
Leu	Asp	Arg	Asn	Gln	Gly	Lys	Cys	Val	Glu	Gly	Gly	Val	Glu	Ile	Phe
						130			135			140			
Asp	Met	Leu	Leu	Ala	Thr	Ser	Ser	Arg	Phe	Arg	Met	Met	Asn	Leu	Gln
	145					150			155			160			
Gly	Glu	Glu	Phe	Val	Cys	Leu	Lys	Ser	Ile	Ile	Leu	Leu	Asn	Ser	Gly
						165			170			175			
Val	Tyr	Thr	Phe	Leu	Ser	Ser	Thr	Leu	Lys	Ser	Leu	Glu	Glu	Lys	Asp
						180			185			190			
His	Ile	His	Arg	Val	Leu	Asp	Lys	Ile	Thr	Asp	Thr	Leu	Ile	His	Leu
						195			200			205			
Met	Ala	Lys	Ala	Gly	Leu	Thr	Leu	Gln	Gln	Gln	His	Gln	Arg	Leu	Ala
						210			215			220			
Gln	Leu	Leu	Leu	Ile	Leu	Ser	His	Ile	Arg	His	Met	Ser	Asn	Lys	Gly
						225			230			235			240
Met	Glu	His	Leu	Tyr	Ser	Met	Lys	Cys	Lys	Asn	Val	Val	Pro	Leu	Tyr
						245			250			255			
Asp	Leu	Leu	Leu	Glu	Met	Leu	Asp	Ala	His	Arg	Leu	His	Ala	Pro	Thr
						260			265			270			
Ser	Arg	Gly	Gly	Ala	Ser	Val	Glu	Glu	Thr	Asp	Gln	Ser	His	Leu	Ala
						275			280			285			
Thr	Ala	Gly	Ser	Thr	Ser	Ser	His	Ser	Leu	Gln	Lys	Tyr	Tyr	Ile	Thr
						290			295			300			

Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
 305 310

<210> 4
 <211> 314
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> human sequence with point mutations

<400> 4
 Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
 1 5 10 15
 Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
 20 25 30
 Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
 35 40 45
 Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
 50 55 60
 Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
 65 70 75 80
 Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
 85 90 95
 Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
 100 105 110
 Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
 115 120 125
 Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Ile Phe
 130 135 140
 Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
 145 150 155 160
 Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
 165 170 175
 Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
 180 185 190
 His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
 195 200 205
 Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
 210 215 220
 Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
 225 230 235 240
 Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
 245 250 255
 Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
 260 265 270
 Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
 275 280 285
 Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
 290 295 300
 Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
 305 310

<210> 5
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 5
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 6
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 6
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser .Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190

His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 7
<211> 314

<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 7

Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Met Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 8
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 8
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 9
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 9
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 10
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 10
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Ile Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 11
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 11
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 12
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 12
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 13
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 13
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Val Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 14
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 14

Ser	Ala	Gly	Asp	Met	Arg	Ala	Ala	Asn	Leu	Trp	Pro	Ser	Pro	Leu	Met
1				5				10						15	
Ile	Lys	Arg	Ser	Lys	Lys	Asn	Ser	Leu	Ala	Leu	Ser	Leu	Thr	Ala	Asp
	20							25						30	
Gln	Met	Val	Ser	Ala	Leu	Leu	Asp	Ala	Glu	Pro	Pro	Ile	Leu	Tyr	Ser
	35						40						45		
Glu	Tyr	Asp	Pro	Thr	Arg	Pro	Phe	Ser	Glu	Ala	Ser	Met	Met	Gly	Leu
	50						55					60			
Leu	Thr	Asn	Leu	Ala	Asp	Arg	Glu	Leu	Val	His	Met	Ile	Asn	Trp	Ala
65					70				75					80	
Lys	Arg	Val	Pro	Gly	Phe	Val	Asp	Leu	Thr	Leu	His	Asp	Gln	Val	His
	85							90						95	
Leu	Leu	Glu	Cys	Ala	Trp	Met	Glu	Ile	Leu	Met	Ile	Gly	Leu	Val	Trp
	100						105						110		
Arg	Ser	Met	Glu	His	Pro	Gly	Lys	Leu	Leu	Trp	Ala	Pro	Asn	Leu	Leu
	115						120						125		
Leu	Asp	Arg	Asn	Gln	Gly	Lys	Cys	Val	Glu	Gly	Ala	Val	Glu	Leu	Phe
	130						135						140		
Asp	Met	Leu	Leu	Ala	Thr	Ser	Ser	Arg	Phe	Arg	Met	Met	Asn	Leu	Gln
145							150				155			160	
Gly	Glu	Glu	Phe	Val	Cys	Leu	Lys	Ser	Ile	Ile	Leu	Leu	Asn	Ser	Gly
	165						170						175		
Val	Tyr	Thr	Phe	Leu	Ser	Ser	Thr	Leu	Lys	Ser	Leu	Glu	Glu	Lys	Asp
	180						185						190		
His	Ile	His	Arg	Val	Leu	Asp	Lys	Ile	Thr	Asp	Thr	Leu	Ile	His	Leu
	195						200						205		
Met	Ala	Lys	Ala	Gly	Leu	Thr	Leu	Gln	Gln	His	Gln	Arg	Leu	Ala	
	210						215						220		
Gln	Leu	Leu	Leu	Ile	Leu	Ser	His	Ile	Arg	His	Met	Ser	Asn	Lys	Gly
225							230				235			240	
Met	Glu	His	Leu	Tyr	Ser	Met	Lys	Cys	Lys	Asn	Val	Val	Pro	Leu	Tyr
	245							250						255	
Asp	Leu	Leu	Leu	Glu	Met	Leu	Asp	Ala	His	Arg	Leu	His	Ala	Pro	Thr
	260						265						270		
Ser	Arg	Gly	Gly	Ala	Ser	Val	Glu	Glu	Thr	Asp	Gln	Ser	His	Leu	Ala
	275						280						285		
Thr	Ala	Gly	Ser	Thr	Ser	Ser	His	Ser	Leu	Gln	Lys	Tyr	Tyr	Ile	Thr
	290						295						300		
Gly	Glu	Ala	Glu	Gly	Phe	Pro	Ala	Thr	Val						
	305						310								

<210> 15
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 15
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Val Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Ala Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 16
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 16
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Ile Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 17
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 17
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Ile Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 18
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 18
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 19
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 19
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 20
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 20
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Met Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 21
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 21
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 22
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 22
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 23
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 23
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Ile Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 24
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 24
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 25
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 25
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 26
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 26
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Val Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 27
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 27
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Ala Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 28
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 28
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Ala Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Val Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Ala Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Gly
225 230 235 240
Met Glu Val Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 29
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 29
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Ile Phe
130 135 140
Asp Met Leu Ile Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 30
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 30
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Ile Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 31
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 31
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 32
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 32
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 33
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 33
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Met Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Met Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 34
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 34
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 35
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 35
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 36
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 36
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Ile Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Val Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 37
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 37
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Phe Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285

Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 38
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 38

Ser	Ala	Gly	Asp	Met	Arg	Ala	Ala	Asn	Leu	Trp	Pro	Ser	Pro	Leu	Met
1				5				10						15	
Ile	Lys	Arg	Ser	Lys	Lys	Asn	Ser	Leu	Ala	Leu	Ser	Leu	Thr	Ala	Asp
					20				25					30	
Gln	Met	Val	Ser	Ala	Leu	Leu	Asp	Ala	Glu	Pro	Pro	Ile	Leu	Tyr	Ser
					35			40					45		
Glu	Tyr	Asp	Pro	Thr	Arg	Pro	Phe	Ser	Glu	Ala	Ser	Met	Met	Gly	Leu
					50			55			60				
Leu	Thr	Asn	Leu	Ala	Asp	Arg	Glu	Leu	Val	His	Met	Ile	Asn	Trp	Ala
					65			70		75			80		
Lys	Arg	Val	Pro	Gly	Phe	Val	Asp	Leu	Thr	Leu	His	Asp	Gln	Val	His
					85			90			95				
Leu	Leu	Glu	Cys	Ala	Trp	Met	Glu	Ile	Leu	Met	Ile	Gly	Leu	Val	Trp
					100			105			110				
Arg	Ser	Met	Glu	His	Pro	Gly	Lys	Leu	Leu	Trp	Ala	Pro	Asn	Leu	Leu
					115			120			125				
Leu	Asp	Arg	Asn	Gln	Gly	Lys	Cys	Val	Glu	Gly	Gly	Val	Glu	Leu	Phe
					130			135			140				
Asp	Met	Leu	Leu	Ala	Thr	Ser	Ser	Arg	Phe	Arg	Met	Met	Asn	Leu	Gln
					145			150			155			160	
Gly	Glu	Glu	Phe	Val	Cys	Leu	Lys	Ser	Ile	Ile	Leu	Leu	Asn	Ser	Gly
					165			170			175				
Val	Tyr	Thr	Phe	Leu	Ser	Ser	Thr	Leu	Lys	Ser	Leu	Glu	Glu	Lys	Asp
					180			185			190				
His	Ile	His	Arg	Val	Leu	Asp	Lys	Ile	Thr	Asp	Thr	Leu	Ile	His	Leu
					195			200			205				
Met	Ala	Lys	Ala	Gly	Leu	Thr	Leu	Gln	Gln	Gln	His	Gln	Arg	Leu	Ala
					210			215			220				
Gln	Leu	Leu	Leu	Ile	Leu	Ser	His	Ile	Arg	His	Met	Ser	Asn	Lys	Arg
					225			230			235			240	
Met	Glu	His	Leu	Tyr	Ser	Met	Lys	Cys	Lys	Asn	Val	Val	Pro	Leu	Tyr
					245			250			255				
Asp	Leu	Leu	Leu	Glu	Met	Leu	Asp	Ala	His	Arg	Leu	His	Ala	Pro	Thr
					260			265			270				
Ser	Arg	Gly	Gly	Ala	Ser	Val	Glu	Glu	Thr	Asp	Gln	Ser	His	Leu	Ala
					275			280			285				
Thr	Ala	Gly	Ser	Thr	Ser	Ser	His	Ser	Leu	Gln	Lys	Tyr	Tyr	Ile	Thr
					290			295			300				
Gly	Glu	Ala	Glu	Gly	Phe	Pro	Ala	Thr	Val						
					305			310							

<210> 39
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 39
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Val Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160

Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 40
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 40
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30
Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Leu Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Ala Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 41
<211> 314
<212> PRT
<213> Artificial Sequence

<220>
<223> human sequence with point mutations

<400> 41
Ser Ala Gly Asp Met Arg Ala Ala Asn Leu Trp Pro Ser Pro Leu Met
1 5 10 15
Ile Lys Arg Ser Lys Lys Asn Ser Leu Ala Leu Ser Leu Thr Ala Asp
20 25 30

Gln Met Val Ser Ala Leu Leu Asp Ala Glu Pro Pro Ile Leu Tyr Ser
35 40 45
Glu Tyr Asp Pro Thr Arg Pro Phe Ser Glu Ala Ser Met Met Gly Leu
50 55 60
Leu Thr Asn Leu Ala Asp Arg Glu Leu Val His Met Ile Asn Trp Ala
65 70 75 80
Lys Arg Val Pro Gly Phe Val Asp Leu Thr Leu His Asp Gln Val His
85 90 95
Leu Leu Glu Cys Ala Trp Met Glu Ile Leu Met Ile Gly Val Val Trp
100 105 110
Arg Ser Met Glu His Pro Gly Lys Leu Leu Trp Ala Pro Asn Leu Leu
115 120 125
Leu Asp Arg Asn Gln Gly Lys Cys Val Glu Gly Ala Val Glu Leu Phe
130 135 140
Asp Met Leu Leu Ala Thr Ser Ser Arg Phe Arg Met Met Asn Leu Gln
145 150 155 160
Gly Glu Glu Phe Val Cys Leu Lys Ser Ile Ile Leu Leu Asn Ser Gly
165 170 175
Val Tyr Thr Phe Leu Ser Ser Thr Leu Lys Ser Leu Glu Glu Lys Asp
180 185 190
His Ile His Arg Val Leu Asp Lys Ile Thr Asp Thr Leu Ile His Leu
195 200 205
Met Ala Lys Ala Gly Leu Thr Leu Gln Gln His Gln Arg Leu Ala
210 215 220
Gln Leu Leu Leu Ile Leu Ser His Ile Arg His Met Ser Asn Lys Arg
225 230 235 240
Met Glu His Leu Tyr Ser Met Lys Cys Lys Asn Val Val Pro Leu Tyr
245 250 255
Asp Leu Leu Leu Glu Met Leu Asp Ala His Arg Leu His Ala Pro Thr
260 265 270
Ser Arg Gly Gly Ala Ser Val Glu Glu Thr Asp Gln Ser His Leu Ala
275 280 285
Thr Ala Gly Ser Thr Ser Ser His Ser Leu Gln Lys Tyr Tyr Ile Thr
290 295 300
Gly Glu Ala Glu Gly Phe Pro Ala Thr Val
305 310

<210> 42
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> consensus human sequence

<400> 42
ggtaatatt aata 14

<210> 43
<211> 844
<212> PRT
<213> Artificial Sequence

<220>
<223> chimeric human sequence with point mutations

<400> 43
Met Val Ser Lys Leu Ser Gln Leu Gln Thr Glu Leu Leu Ala Ala Leu
1 5 10 15
Leu Glu Ser Gly Leu Ser Lys Glu Ala Leu Ile Gln Ala Leu Gly Glu
20 25 30
Pro Gly Pro Tyr Leu Leu Ala Gly Glu Gly Pro Leu Asp Lys Gly Glu
35 40 45
Ser Cys Gly Gly Arg Gly Glu Leu Ala Glu Leu Pro Asn Gly Leu
50 55 60
Gly Glu Thr Arg Gly Ser Glu Asp Glu Thr Asp Asp Asp Gly Glu Asp
65 70 75 80
Phe Thr Pro Pro Ile Leu Lys Glu Leu Glu Asn Leu Ser Pro Glu Glu
85 90 95
Ala Ala His Gln Lys Ala Val Val Glu Thr Leu Leu Gln Glu Asp Pro
100 105 110
Trp Arg Val Ala Lys Met Val Lys Ser Tyr Leu Gln Gln His Asn Ile
115 120 125
Pro Gln Arg Glu Val Val Asp Thr Thr Gly Leu Asn Gln Ser His Leu
130 135 140
Ser Gln His Leu Asn Lys Gly Thr Pro Met Lys Thr Gln Lys Arg Ala
145 150 155 160
Ala Leu Tyr Thr Trp Tyr Val Arg Lys Gln Arg Glu Val Ala Gln Gln
165 170 175
Phe Thr His Ala Gly Gln Gly Leu Ile Glu Glu Pro Thr Gly Asp
180 185 190
Glu Leu Pro Thr Lys Lys Gly Arg Arg Asn Arg Phe Lys Trp Gly Pro
195 200 205
Ala Ser Gln Gln Ile Leu Phe Gln Ala Tyr Glu Arg Gln Lys Asn Pro
210 215 220
Ser Lys Glu Glu Arg Glu Thr Leu Val Glu Glu Cys Asn Arg Ala Glu
225 230 235 240
Cys Ile Gln Arg Gly Val Ser Pro Ser Gln Ala Gln Gly Leu Gly Ser
245 250 255
Asn Leu Val Thr Glu Val Arg Val Tyr Asn Trp Phe Ala Asn Arg Arg
260 265 270

Lys Glu Glu Ala Phe Arg His Lys Leu Ala Asp Ile Lys Asn Ser Leu
 275 280 285
 Ala Leu Ser Leu Thr Ala Asp Gln Met Val Ser Ala Leu Leu Asp Ala
 290 295 300

Glu Pro Pro Ile Leu Tyr Ser Glu Tyr Asp Pro Thr Arg Pro Phe Ser
 305 310 315 320
 Glu Ala Ser Met Met Gly Leu Leu Thr Asn Leu Ala Asp Arg Glu Leu
 325 330 335
 Val His Met Ile Asn Trp Ala Lys Arg Val Pro Gly Phe Val Asp Leu
 340 345 350
 Thr Leu His Asp Gln Val His Leu Leu Glu Cys Ala Trp Met Glu Ile
 355 360 365
 Leu Met Ile Gly Leu Val Trp Arg Ser Met Glu His Pro Gly Lys Leu
 370 375 380
 Leu Phe Ala Pro Asn Leu Leu Asp Arg Asn Gln Gly Lys Cys Val
 385 390 395 400
 Glu Gly Gly Val Glu Ile Phe Asp Met Leu Leu Ala Thr Ser Ser Arg
 405 410 415
 Phe Arg Met Met Asn Leu Gln Gly Glu Phe Val Cys Leu Lys Ser
 420 425 430
 Ile Ile Leu Leu Asn Ser Gly Val Tyr Thr Phe Leu Ser Ser Thr Leu
 435 440 445
 Lys Ser Leu Glu Glu Lys Asp His Ile His Arg Val Leu Asp Lys Ile
 450 455 460
 Thr Asp Thr Leu Ile His Leu Met Ala Lys Ala Gly Leu Thr Leu Gln
 465 470 475 480
 Gln Gln His Gln Arg Leu Ala Gln Leu Leu Leu Ile Leu Ser His Ile
 485 490 495
 Arg His Met Ser Asn Lys Arg Met Glu His Leu Tyr Ser Met Lys Cys
 500 505 510
 Lys Asn Val Val Pro Leu Tyr Asp Leu Leu Leu Glu Met Leu Asp Ala
 515 520 525
 His Arg Leu His Ala Pro Thr Ser Arg Gly Gly Ala Ser Val Glu Glu
 530 535 540
 Thr Asp Gln Ser His Leu Ala Thr Ala Gly Ser Thr Ser Ser His Ser
 545 550 555 560
 Leu Gln Lys Tyr Tyr Ile Thr Gly Glu Ala Glu Gly Phe Pro Ala Thr
 565 570 575
 Val Glu Phe Gln Tyr Leu Pro Asp Thr Asp Asp Arg His Arg Ile Glu
 580 585 590
 Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met Lys Lys
 595 600 605
 Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg Arg Ile
 610 615 620
 Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala Pro Gln
 625 630 635 640
 Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp Glu Phe
 645 650 655
 Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala Leu
 660 665 670
 Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro
 675 680 685

Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val Pro
690 695 700
Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro Lys
705 710 715 720
Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln Leu
725 730 735
Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr Asp
740 745 750
Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe Gln
755 760 765
Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu Pro
770 775 780
Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Gly Ala
785 790 795 800
Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu
805 810 815
Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala Asp
820 825 830
Met Asp Phe Ser Ala Leu Leu Ser Gln Ile Ser Ser
835 840

<210> 44
<211> 7
<212> PRT
<213> human

<400> 44
Met Pro Lys Arg Pro Arg Pro
1 5

<210> 45
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 45
ggaattcggtt gaccgggtct gctggagaca tg

32

<210> 46
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 46
ggaattcgag ctctgaacca gacccgactg tggcaggaa acc 43

<210> 47
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 47
gtccctgacg gccgaccaga tggtcagtgc cttgttggat gctgagccc 49

<210> 48
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 48
gtgctccatg gagcgccaga cgagaccaat catcaggatc tccatccagg c 51

<210> 49
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 49
caaggcaggc ctgaccctgc agcagcagca cc 32

<210> 50
<211> 74
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 50
gcatctccag cagcaggtca tagagggca ccacgttctt gcacttcatg ctgtacagat 60
gctccatcac tttg 74

<210> 51
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 51
gcatctccag cagcaggtca tagaggggca ccacgttctt gcacttcatg ctgtacagca 60
cctccatgcc ttt 73

<210> 52
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 52
cttcagtgaa gtttcgtatga tgggcttact gaccaacctg gcagccaggg 50

<210> 53
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 53
ctatgacctg ctgctggaga tgctggacg 29

<210> 54

<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 54
catatggtcg acgaattcgc ggccgcac 28

<210> 55
<211> 74
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 55
gcatctccag cagcaggta tagagggca ccacgttctt gcacttcatg ctgtacagat 60
gctccatgcg tttg 74

<210> 56
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 56
gtccaagatc tccacgatgc cctctacac 29

<210> 57
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 57
gatatccaag aacagcctgg cttgtccct gacg 34

<210> 58
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 58
actagtgaat tcgactgtgg cagggaaacc ctctgcctcc ,c 41

<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site
sequence

<400> 59
ctgaccaacc tggcagacag 20

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 60
ggactcggtg gatatggtcc 20

<210> 61
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 61
gttcacatga tcaactgggc g 21

<210> 62
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> human sequence with added restriction site sequence

<400> 62
gagacttcag ggtgctggac 20